

LSU Northeast Research Station

Evaluation of Lexar for weed control in corn.

Trial ID: SJ05C005
Location:Study Dir.: HMS003A4-2005US
Investigator: Bill Williams**GENERAL TRIAL INFORMATION****Study Director:** HMS003A4-2005US
Investigator: Bill Williams**Conducted Under GLP (Y/N):** N**Conducted Under GEP (Y/N):** N

Conclusions: Preemergence applications of 3 qt/A Lexar resulted in poor control of most weeds evaluated in this study. Increasing the Lexar rate to 3.5 qt/A greatly improved weed control. Lexar at 3.5 qt/A resulted in the best season long control of signalgrass and sicklepod. Few differences between treatments were observed for teaweed and morningglory control. Preemergence applications of Lexar also resulted in superior weed control compared to early postemergence applications of Steadfast or Roundup. Note, however, that the Steadfast rate (0.5 oz/A) was less than recommended (0.75 oz/A) and that reduced rates of Steadfast are not recommended. Since weeds had already emerged before the V1 applications were activated, V1 applications of Lexar and Bicep were less effective than preemergence applications. Lexar appeared to have more postemergence activity than Bicep, especially on sicklepod. In several cases, adding a non-ionic surfactant improved weed control when either Lexar or Bicep were applied at the V1 stage. Few statistical differences between treatments were observed for corn yield. Corn yields did improve from 123 to 158 bu/a when the Lexar rate was increased from 3 to 3.5 qt/A. Corn yields more than doubled when nonionic surfactant was added to postemergence applications of Lexar or Bicep II Magnum. Overall, the best corn yields (158 to 160 bu/A) were observed from preemergence applications of Lexar, Bicep II Magnum or Lumax.

CROP AND WEED DESCRIPTION

Weed Code	Common Name	Scientific Name
1.	BRAPP Signalgrass, broadleaf	Brachiaria platyphylla
2.	DIGSA Crabgrass, large	Digitaria sanguinalis
3.	CASOB Sickle pod	Cassia obtusifolia
4.	CYPES Nutsedge, yellow	Cyperus esculentus
5.	SIDSP Teaweed	Sida spinosa
6.	IPOHE Morningglory, entireleaf	Ipomoea hederacea

Crop 1: ZEAMX CORN, FIELD**Variety:** Gensis 2A16RR**Planting Date:** 4/4/05**Planting Method:** BEDDED**Rate:** 30000 LB/A**Depth:** 2 "**Row Spacing:** 40 "**Seed Bed:** FINE/TRASHY**Soil Moisture:** DRY**Emergence Date:** 4/11/05**SITE AND DESIGN****Plot Width, Unit:** 13.3 FT**Plot Length, Unit:** 30 FT**Reps:** 3**Site Type:** FIELD**Tillage Type:** CONVENTIONAL-TILL**Study Design:** RANDOMIZED COMPLETE BLOCK**SOIL DESCRIPTION**

% Sand: 34

% OM: 0.6

Texture: Silt loam

% Silt: 54

pH: 5.3

Soil Name: Commerce silt loam

% Clay: 12

CEC: 6.3

Fert. Level: EXCELLENT

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MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.	4/6/05	5:30 AM	0.26	in	Rainfall	0	n/a
2.	4/12/05	3:00 PM	0.88	in	Rainfall	0	n/a
3.	4/26/05	3:00 AM	1.04	in	Rainfall	0	n/a
4.	4/27/05	8:30 AM	0.04	in	Rainfall	0	n/a
5.	4/30/05	3:00 AM	0.21	in	Rainfall	0	n/a
6.	5/10/05	6:30 PM	0.25	in	Rainfall	0	n/a
7.	5/15/05	5:30 PM	0.46	in	Rainfall	0	n/a
8.	5/25/05	8:00 PM	0.78	in	Rainfall	0	n/a
9.	5/29/05	1:00 AM	0.63	in	Rainfall	0	n/a
10.	5/30/05	11:00 A	1.51	in	Rainfall	0	n/a
11.	5/31/05	8:00 PM	0.26	in	Rainfall	0	n/a
12.	6/2/05	4:00 PM	0.04	in	Rainfall	0	n/a
13.	6/6/05	7:00 PM	0.39	in	Rainfall	0	n/a
14.	6/18/05	11:00 A	0.42	in	Rainfall	0	n/a
15.	7/3/04	6:00 PM	0.06	in	Rainfall	0	n/a
16.	7/6/05	1:30 PM	1.6	in	Rainfall	0	n/a
17.	7/8/05	1:45 PM	0.93	in	Rainfall	0	n/a
18.	7/10/05	1:00 PM	0.04	in	Rainfall	0	n/a
19.	7/14/05	2:00 PM	0.44	in	Rainfall	0	n/a
20.	7/16/05	10:00 P	0.04	in	Rainfall	0	n/a
21.	7/17/05	1:00 PM	0.25	in	Rainfall	0	n/a
22.	7/18/05	7:00 PM	0.05	in	Rainfall	0	n/a
23.	7/22/05	2:30 PM	0.15	in	Rainfall	0	n/a
24.	8/4/05	3:30 PM	0.27	in	Rainfall	0	n/a
25.	8/5/05	8:00 PM	0.45	in	Rainfall	0	n/a
26.	8/6/05	6:00 PM	0.25	in	Rainfall	0	n/a
27.	8/16/05	6:00 PM	1.31	in	Rainfall	0	n/a
28.	8/22/05	9:00 PM	0.05	in	Rainfall	0	n/a

Overall Moisture Conditions: Dry

Closest Weather Station: Northeast Research Station

Distance: 0.25 Unit: mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	4/4/05	4/14/05	4/22/05
Time of Day:	2:00	10:00	11:00
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PRE	V1	EPOST
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	76 F	69 F	81 F
% Relative Humidity:	46	50	60
Wind Velocity, Unit:	6 SE	4.5 N	6.5 S
Soil Temp., Unit:	75 F	75 F	84 F
Soil Moisture:	moist	dry	dry
% Cloud Cover:	0	40	40

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	ZEAMX n/a	ZEAMX V1	ZEAMX V2
Stage Scale:	n/a	2 in	4 in

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WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	BRAPP n/a	BRAPP 1 lf	BRAPP 2-3 lf
Stage Scale:	n/a	0.5 in	1-2 in
Weed 2 Code, Stage:	DIGSA n/a	DIGSA n/a	DIGSA n/a
Stage Scale:	n/a	n/a	n/a
Weed 3 Code, Stage:	CASOB n/a	CASOB cot	CASOB 1-2 lf
Stage Scale:	n/a	0.5 in	1-2 in
Weed 4 Code, Stage:	CYPES n/a	CYPES n/a	CYPES n/a
Stage Scale:	n/a	2-6 in	6-8 in
Weed 5 Code, Stage:	SIDSP n/a	SIDSP n/a	SIDSP cot
Stage Scale:	n/a	n/a	0.5 in
Weed 6 Code, Stage:	IPOHE n/a	IPOHE n/a	IPOHE 1 lf
Stage Scale:	n/a	n/a	1 in

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	34	34	34
Nozzle Type:	Ven.	Ven.	Ven.
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 "	20 "	20 "
Nozzles/Row:	2	2	2
Carrier:	Water	Water	Water
Spray Volume, Unit:	15 GPA	15 GPA	15 GPA
Propellant:	CO2	CO2	CO2

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Trial ID: SJ05C005
 Location:

Study Dir.: HMS003A4-2005US
 Investigator: Bill Williams

Weed Code	BRAPP	BRAPP	BRAPP	BRAPP
Crop Code				
Part Rated	PLTAT P	PLTAT P	PLTAT P	PLTAT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%
Rating Date	4/12/05	4/28/05	5/11/05	5/26/05
Trt-Eval Interval	8 DA-A	6 DA-C	19 DA-C	34 DA-C
ARM Action Codes				
# Subsamples, Dec.				

Trt No.	Treatment Name	Rate	Unit	Grow Stg	1	2	3	4	
1	nontreated				0	e 0	e 0	f 0	f
2	Lexar	3	QT/A	PRE	70	d 63	d 53	e 43	e
3	Lexar	3.5	QT/A	PRE	95	a 93	a 93	a 90	a
4	Bicep II Magnum	2.1	QT/A	PRE	88	b 90	a 88	ab 80	c
5	Lumax	2.5	QT/A	PRE	95	a 92	a 93	a 83	bc
6	Lexar	3	QT/A	PRE	80	c 92	a 90	a 87	ab
	Princep 4FL	1	QT/A	PRE					
7	Guardsman Max	3	PT/A	PRE	90	b 92	a 82	bc 70	d
8	Harness Xtra	2	QT/A	PRE	88	b 90	a 92	a 80	c
9	Epic	10	OZ/A	PRE	72	d 82	bc 72	d 70	d
10	Keystone	2.6	QT/A	PRE	90	b 90	a 88	ab 73	d
11	Lexar	3	QT/A	V1	0	e 90	a 92	a 90	a
	NIS	0.25	% V/V	V1					
12	Bicep II Magnum	2.1	QT/A	V1	0	e 80	c 82	bc 80	c
	NIS	0.25	% V/V	V1					
13	Steadfast	0.5	OZ/A	EPOST	0	e 88	ab 92	a 82	c
	Atrazine	2	QT/A	EPOST					
	COC	1	% V/V	EPOST					
14	Roundup Weathermax	22	OZ/A	EPOST	0	e 93	a 93	a 82	c
	Atrazine	2	QT/A	EPOST					
15	Lexar	3	QT/A	V1	0	e 92	a 92	a 88	a
16	Bicep II Magnum	2.1	QT/A	V1	0	e 60	d 75	cd 72	d
LSD (P=.05)					2.1	6.8	7.7	4.4	
Bartlett's X2					0.0	7.242	12.335	3.15	
P(Bartlett's X2)					1.00	0.779	0.50	0.871	

Means followed by same letter do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code	BRAPP	DIGSA	CASOB	CASOB
Crop Code				
Part Rated	PLTAT P	PLTAT P	PLTAT P	PLTAT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%
Rating Date	7/27/05	7/27/05	4/12/05	4/28/05
Trt-Eval Interval	96 DA-C	96 DA-C	8 DA-A	6 DA-C
ARM Action Codes				
# Subsamples, Dec.				

Trt No.	Treatment Name	Rate	Unit	Grow Stg	5	6	7	8	
1	nontreated				0	h 0	k 0	e 0	e
2	Lexar	3	QT/A	PRE	43	g 73	ghi 80	c 70	c
3	Lexar	3.5	QT/A	PRE	92	a 93	a 95	a 90	ab
4	Bicep II Magnum	2.1	QT/A	PRE	77	cd 82	c-f 95	a 92	ab
5	Lumax	2.5	QT/A	PRE	85	ab 88	abc 95	a 92	ab
6	Lexar	3	QT/A	PRE	87	ab 90	ab 90	b 93	a
	Princep 4FL	1	QT/A	PRE					
7	Guardman Max	3	PT/A	PRE	67	ef 85	bcd 95	a 88	ab
8	Harness Xtra	2	QT/A	PRE	80	bc 80	d-g 95	a 87	b
9	Epic	10	OZ/A	PRE	63	f 77	e-h 70	d 70	c
10	Keystone	2.6	QT/A	PRE	63	f 68	ij 95	a 90	ab
11	Lexar	3	QT/A	V1	90	a 83	b-e 0	e 90	ab
	NIS	0.25	% V/V	V1					
12	Bicep II Magnum	2.1	QT/A	V1	80	bc 73	ghi 0	e 62	d
	NIS	0.25	% V/V	V1					
13	Steadfast	0.5	OZ/A	EPOST	77	cd 70	hij 0	e 92	ab
	Atrazine	2	QT/A	EPOST					
	COC	1	% V/V	EPOST					
14	Roundup Weathermax	22	OZ/A	EPOST	70	def 75	f-i 0	e 93	a
	Atrazine	2	QT/A	EPOST					
15	Lexar	3	QT/A	V1	87	ab 83	b-e 0	e 92	ab
16	Bicep II Magnum	2.1	QT/A	V1	73	cde 63	j 0	e 0	e
LSD (P=.05)					8.0	7.8	0.0	6.3	
Bartlett's X2					0.39	3.467	0.0	7.028	
P(Bartlett's X2)					1.00	0.996	.	0.797	

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code	CASOB	CASOB	CASOB	SIDSP
Crop Code				
Part Rated	PLTAT P	PLTAT P	PLTAT P	PLTAT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%
Rating Date	5/11/05	5/26/05	7/27/05	4/28/05
Trt-Eval Interval	19 DA-C	34 DA-C	96 DA-C	6 DA-C
ARM Action Codes				
# Subsamples, Dec.				

Trt No.	Treatment Name	Rate	Unit	Grow Stg	9	10	11	12	
1	nontreated				0	h 0	f 0	f 0	d
2	Lexar	3	QT/A	PRE	70	ef 67	c 63	cd 93	a
3	Lexar	3.5	QT/A	PRE	95	a 95	a 87	a 92	a
4	Bicep II Magnum	2.1	QT/A	PRE	73	e 70	b 67	bc 92	a
5	Lumax	2.5	QT/A	PRE	95	a 95	a 87	a 92	a
6	Lexar	3	QT/A	PRE	88	abc 93	a 85	a 93	a
	Princep 4FL	1	QT/A	PRE					
7	Guardman Max	3	PT/A	PRE	63	fg 60	d 57	de 92	a
8	Harness Xtra	2	QT/A	PRE	88	abc 95	a 67	bc 90	a
9	Epic	10	OZ/A	PRE	70	ef 70	b 60	cde 93	a
10	Keystone	2.6	QT/A	PRE	77	de 70	b 53	e 93	a
11	Lexar	3	QT/A	V1	88	abc 95	a 73	b 90	a
	NIS	0.25	% V/V	V1					
12	Bicep II Magnum	2.1	QT/A	V1	60	g 50	e 0	f 65	b
	NIS	0.25	% V/V	V1					
13	Steadfast	0.5	OZ/A	EPOST	87	bc 95	a 75	b 92	a
	Atrazine	2	QT/A	EPOST					
	COC	1	% V/V	EPOST					
14	Roundup Weathermax	22	OZ/A	EPOST	93	ab 95	a 93	a 93	a
	Atrazine	2	QT/A	EPOST					
15	Lexar	3	QT/A	V1	83	cd 95	a 87	a 92	a
16	Bicep II Magnum	2.1	QT/A	V1	0	h 0	f 0	f 53	c
LSD (P=.05)					6.8	2.6	8.3	5.8	
Bartlett's X2					4.131	0.879	3.446	7.882	
P(Bartlett's X2)					0.845	0.349	0.983	0.851	

Means followed by same letter do not significantly differ (P=.05, LSD)
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Weed Code	SIDSP	SIDSP	SIDSP	IPOHE
Crop Code				
Part Rated	PLTAT P	PLTAT P	PLTAT P	PLTAT P
Rating Data Type	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit	%	%	%	%
Rating Date	5/11/05	5/26/05	7/27/05	5/11/05
Trt-Eval Interval	19 DA-C	34 DA-C	96 DA-C	19 DA-C
ARM Action Codes				
# Subsamples, Dec.				

Trt No.	Treatment Name	Rate	Unit	Grow Stg	13	14	15	16	
1	nontreated				0	e 0	c 0	e 0	d
2	Lexar	3	QT/A	PRE	92	ab 93	a 90	abc 83	c
3	Lexar	3.5	QT/A	PRE	95	a 95	a 93	a 95	a
4	Bicep II Magnum	2.1	QT/A	PRE	90	ab 95	a 83	c 92	b
5	Lumax	2.5	QT/A	PRE	95	a 95	a 93	a 95	a
6	Lexar	3	QT/A	PRE	95	a 95	a 92	ab 95	a
	Princep 4FL	1	QT/A	PRE					
7	Guardman Max	3	PT/A	PRE	92	ab 95	a 92	ab 92	b
8	Harness Xtra	2	QT/A	PRE	87	b 95	a 85	bc 95	a
9	Epic	10	OZ/A	PRE	93	a 95	a 88	abc 95	a
10	Keystone	2.6	QT/A	PRE	95	a 95	a 87	abc 95	a
11	Lexar	3	QT/A	V1	95	a 95	a 93	a 95	a
	NIS	0.25	% V/V	V1					
12	Bicep II Magnum	2.1	QT/A	V1	63	c 63	b 60	d 95	a
	NIS	0.25	% V/V	V1					
13	Steadfast	0.5	OZ/A	EPOST	95	a 95	a 90	abc 95	a
	Atrazine	2	QT/A	EPOST					
	COC	1	% V/V	EPOST					
14	Roundup Weathermax	22	OZ/A	EPOST	95	a 95	a 88	abc 95	a
	Atrazine	2	QT/A	EPOST					
15	Lexar	3	QT/A	V1	93	a 95	a 92	ab 95	a
16	Bicep II Magnum	2.1	QT/A	V1	53	d 0	c 0	e 93	ab
LSD (P=.05)					5.8	2.7	6.9	3.2	
Bartlett's X2					4.206	0.879	6.526	1.64	
P(Bartlett's X2)					0.756	0.349	0.769	0.65	

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Weed Code	IPOHE	IPOHE		
Crop Code			ZEAMX	ZEAMX
Part Rated	PLTAT P	PLTAT P	PLATOT C	GRAIN C
Rating Data Type	CONTROL	CONTROL	PHYGEN	Lb/plt
Rating Unit	%	%	%	15%
Rating Date	5/26/05	7/27/05	4/28/05	9/2/05
Trt-Eval Interval	34 DA-C	96 DA-C	24 DA-A	
ARM Action Codes				
# Subsamples, Dec.				

Trt No.	Treatment Name	Rate	Unit	Grow Stg	17	18	19	20
1	nontreated				0	b 0	d 0	b 4 f
2	Lexar	3	QT/A	PRE	93	a 93	ab 0	b 20 d
3	Lexar	3.5	QT/A	PRE	95	a 95	a 0	b 26 a
4	Bicep II Magnum	2.1	QT/A	PRE	95	a 87	bc 0	b 26 a
5	Lumax	2.5	QT/A	PRE	95	a 93	ab 0	b 26 a
6	Lexar	3	QT/A	PRE	95	a 92	ab 0	b 24 abc
	Princep 4FL	1	QT/A	PRE				
7	Guardman Max	3	PT/A	PRE	95	a 92	ab 0	b 21 cd
8	Harness Xtra	2	QT/A	PRE	95	a 90	abc 0	b 23 a-d
9	Epic	10	OZ/A	PRE	95	a 88	abc 0	b 21 cd
10	Keystone	2.6	QT/A	PRE	95	a 83	c 0	b 22 bcd
11	Lexar	3	QT/A	V1	95	a 93	ab 0	b 23 a-d
	NIS	0.25	% V/V	V1				
12	Bicep II Magnum	2.1	QT/A	V1	93	a 92	ab 0	b 24 abc
	NIS	0.25	% V/V	V1				
13	Steadfast	0.5	OZ/A	EPOST	95	a 87	bc 7	a 22 cd
	Atrazine	2	QT/A	EPOST				
	COC	1	% V/V	EPOST				
14	Roundup Weathermax	22	OZ/A	EPOST	95	a 95	a 0	b 25 ab
	Atrazine	2	QT/A	EPOST				
15	Lexar	3	QT/A	V1	95	a 92	ab 0	b 11 e
16	Bicep II Magnum	2.1	QT/A	V1	95	a 87	bc 0	b 11 e
LSD (P=.05)					1.7	6.7	2.4	3.2
Bartlett's X2					0.0	8.136	0.0	9.984
P(Bartlett's X2)					1.00	0.701	.	0.763

Means followed by same letter do not significantly differ (P=.05, LSD)
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Weed Code
 Crop Code ZEAMX
 Part Rated GRAIN C
 Rating Data Type Bu/A
 Rating Unit 15% mst
 Rating Date 9/2/05
 Trt-Eval Interval
 ARM Action Codes TY1
 # Subsamples, Dec. 0

Trt No.	Treatment Name	Rate	Unit	Grow Stg	21	
1	nontreated				25	f
2	Lexar	3	QT/A	PRE	123	d
3	Lexar	3.5	QT/A	PRE	158	a
4	Bicep II Magnum	2.1	QT/A	PRE	160	a
5	Lumax	2.5	QT/A	PRE	160	a
6	Lexar	3	QT/A	PRE	148	abc
	Princep 4FL	1	QT/A	PRE		
7	Guardman Max	3	PT/A	PRE	129	cd
8	Harness Xtra	2	QT/A	PRE	141	a-d
9	Epic	10	OZ/A	PRE	131	cd
10	Keystone	2.6	QT/A	PRE	137	bcd
11	Lexar	3	QT/A	V1	141	a-d
	NIS	0.25	% V/V	V1		
12	Bicep II Magnum	2.1	QT/A	V1	145	abc
	NIS	0.25	% V/V	V1		
13	Steadfast	0.5	OZ/A	EPOST	133	cd
	Atrazine	2	QT/A	EPOST		
	COC	1	% V/V	EPOST		
14	Roundup Weathermax	22	OZ/A	EPOST	153	ab
	Atrazine	2	QT/A	EPOST		
15	Lexar	3	QT/A	V1	66	e
16	Bicep II Magnum	2.1	QT/A	V1	65	e
LSD (P=.05)					19.9	
Bartlett's X2					9.984	
P(Bartlett's X2)					0.763	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Column 21: TY1 = 6.137908*[20]